

Evaluation of the Interference of the Microwave Radiation Emitted from GSM Mobile Phones on the Performance of Cell Counters

Bahaedini ,N.

Radiology Department, Paramedical Sciences
School, Shiraz University of Medical Sciences

Atefi, M.

Radiology Department, Paramedical Sciences
School, Shiraz University of Medical Sciences

Mortazavi, S.M.J. (PhD)

Associate Professor of Medical Physics
Radiology Department, Paramedical Sciences
School, Shiraz University of Medical Sciences

Corresponding Author: Mortazavi SMJ

E.mail: mmortazavi@sums.ac.ir

Abstract

Background and Objectives: Incidents related to electromagnetic interference with medical devices have been reported over the past decades. It has also been indicated that the microwave radiation emitted from mobile phones interferes with the operation of medical devices; therefore, this study aimed at testing the interference by GSM mobile phones with cell counters.

Material and Methods: We did this experimental Study on thirty-two heparinized blood samples of 32 healthy individuals Selected randomly. The Cell Counting was Carried out in the presence of Electro magnetic field produced by three Cell phones with different levels of SAR (Low, intermediate and High) and without being in electromagnetic field. Statistical tests were used to analyze the data ($p<0.05$).

Results: Microwave radiation emitted from cell phones, regardless of their SAR, interferes with the proper operation of cell Counter. This interference leads to false Counting.

Conclusion: As mobile phones emit microwave radiation in an isotropic manner, keeping mobile phones at a safe distance, 15cm, from medical equipments will be necessary. These observations confirm the need for some restrictions of mobile phone use in hospitals and medical laboratories.

Key words: Interference, Cell Counters, Mobile Phone, Microwave Radiation